



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/685,977	10/10/2000	Hui Liu	05158.P001	4765
29053	7590	10/14/2005	EXAMINER	
DALLAS OFFICE OF FULBRIGHT & JAWORSKI L.L.P.			NGUYEN, STEVEN H D	
2200 ROSS AVENUE				
SUITE 2800			ART UNIT	
DALLAS, TX 75201-2784			PAPER NUMBER	
			2665	

DATE MAILED: 10/14/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No. 

09/685,977

Applicant(s)

LIU ET AL.

Examiner

Steven HD Nguyen

Art Unit

2665

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 25 July 2005.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-33,35 and 36 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-33 and 35-36 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

DETAILED ACTION

Continued Examination Under 37 CFR 1.114

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 7/25/05 has been entered.

Claim Rejections - 35 USC § 103

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. Claims 1, 3-5 and 22-31 are rejected under 35 U.S.C. 103(a) as being unpatentable over Alamouti (USP 5933421) in view of Sampath (USP 6922445).

Regarding claims 1, 3-5 and 22-31, Alamouti '421 discloses (Figs 1-4 and col. 1, lines 25 to col. 29, line 5) a cellular network comprising a plurality of subscribers (Fig 1, Ref U, V, W and X) communicating with the base station using orthogonal frequency division multiple access (OFDMA) (Fig 1); at least one base station (Fig 1, Ref Z) having logic to coordinate multiple access and information exchange between the at least one base station and the plurality of subscribers, the logic selecting a set of OFDMA traffic channels from a plurality of candidate OFDMA traffic channels based on feedback channel information including channel fading and

Art Unit: 2665

noise and interference collected from the plurality of subscribers in response to a received signal from the base station via a feedback channel for assigning these channels for the subscriber by using spatial multiplexing (See col. 22, lines 55 to col. 23, line 22, the RUs measure the RSSI and SINR of the received signal from the base station and report this measured signal to the serving base station, col. 24, lines 9-47, the RU “subscriber” measures the RSSI and SINR of the channels in response a received signal from the base station and reports these measured back to the base station which uses these reports for allocating the channels for the RU by using SDMA) and selecting a combination of modulation and coding schemes based on SINR for each accessing subscriber (Col. 14, lines 32-45) and measuring SINR of the incoming signals at the base station to be use for allocating channel to the subscribers (Col. 23, lines 35-67). However, Alamouti fails to fully disclose the logic selects a set of channels based on the feedback channel information from the subscribers and channel information collected from at least one other base station or at the base station or allocating channels to the subscribers through a collaborative channel assignment among a plurality of base stations for transmitting packets. In the same field of endeavor, Sampath discloses a system and method for selecting channels based on the feedback information such the measured value of SINR, SNR (Fig 5, Ref 100 and 106 discloses the subscribers of the system measures the received signal from the base stations and feedback this information to the base stations, Ref 208 and 210 of Fig 9) and the collected information from a serving base station (Fig 9, Ref 202 or control unit) and the neighboring base station (Fig 9, Ref 210) and a logic unit (Fig 9, Ref control unit or controller) for receiving these information and using these information for selecting the channels to be used for transmitting the packets (See col. 13, lines 4-35).

Since, Alamouti suggests that the subscribers measures the downlink signals from a serving base station and the neighboring base stations and feedback this information to the base station for selecting channels for using to carry the information in time domain for plurality of subscribers and measuring uplink SINR (See col. 24, lines 13-23). Sampath suggests that a method and system for receiving the measured value of downlink of the subscribers for selecting the channel for carrying the user information based on OFDM system. Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention was made to apply a method and system for receiving the measured value of downlink of the subscribers at the controller via the base stations for selecting the channels for the subscribers as disclosed Sampath into Alamouti's system and method. The motivation would have been to provide a reliable and relatively fast method for assigning the channels to the subscriber units.

4. Claims 2, 7-21, 32-33 and 35-36 are rejected under 35 U.S.C. 103(a) as being unpatentable over Alamouti (USP 5933421) in view of Larsson (USP 5956642) and Sampath (USP 6922445).

Regarding claims 2, 7-21, 32-33 and 35-36, Alamouti '421 discloses (Figs 1-4 and col. 1, lines 25 to col. 29, line 5) a cellular network comprising plurality of base station for receiving a feedback signal of the channels such SNIR and gain from the subscribers in response to a receive signals such pilot tone "sound signal" and using this information for assigning the channels to the subscribers based on QOS (Col. 24, lines 24-47 and col. 22, lines 20-24, col. 22, lines 55 to col. 23, line 22, the RUs measure the RSSI and SINR of the received signal from the base station and report this measured signal to the serving base station) selecting a combination of modulation and coding schemes based on SINR for each accessing subscriber (Col. 14, lines 32-

Art Unit: 2665

45); a plurality of base stations coordinating to perform the traffic channel assignment (col. 24, lines 13-24) and adjusting weight of the downlink signal based on the feedback of the subscriber (col. 20, lines 25-34) and measuring SINR of the incoming signals at the base station to be use for allocating channel to the subscribers (Col. 23, lines 35-67). However, Alamouti fails to discloses calculating spatial gains of uplink and downlink based on responses of the spatially separated receivers at the base station wherein channel condition regarding estimating channel gains and interference and antennas; estimating SINR for uplink and downlink signals for using to assigning the traffic channels; estimating SINR for uplink and downlink for accessing and active subscribers and assigning channels to the plurality of subscribers based on channel condition information and estimating gains for uplink and downlink signals for the plurality of subscribers. In the same field of endeavor, Larsson discloses (Figs 1-8 and col. 2, lines 2 to col. 18, lines 19) a system for calculating spatial gains of uplink and downlink based on responses of the spatially separated receivers at the base station wherein channel condition regarding estimating channel gains and interference and antennas; estimating SINR for uplink and downlink signals for using to assigning the traffic channels, for accessing and active subscribers. (Fig 8, Ref 909 for determining uplink and 902 for determining downlink which is feed back to the transmitter via link 908; 914 for determining the best channels to be used by channel allocator for assigning to the communication between the receiver and transmitter); omni-directional antenna for transmitting signals (Fig 1). However, Alamouti and Larsson fail to disclose assigning channels to the plurality of subscribers based on channel condition information that collected from the subscribers via the base stations “collaboration with the base stations for assigning the channels to the subscribers”. In the same field of endeavor, Sampath

Art Unit: 2665

discloses a system and method for selecting channels based on the feedback information such the measured value of SINR, SNR (Fig 5, Ref 100 and 106 discloses the subscribers of the system measures the received signal from the base stations and feedback this information to the base stations, Ref 208 and 210 of Fig 9) and the collected information from a serving base station (Fig 9, Ref 202 or control unit) and the neighboring base station (Fig 9, Ref 210) and a logic unit (Fig 9, Ref control unit or controller) for receiving these collected information to be used for selecting the channels to be assigned to the subscriber (See col. 13, lines 4-35).

Since, Alamouti suggests that the subscribers measures the downlink signals from a serving base station and the neighboring base stations and feedback this information to the base station for selecting channels for using to carry the information in time domain (See col. 24, lines 13-23). Larsson suggests a system and method for measuring the channel condition for uplink and downlink and using this information for assigning the channels in order to reuse the channels. Sampath suggests that a method and system for receiving the measured value of downlink of the subscribers for selecting the channel for carrying the user information based on OFDM system. Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention was made to apply a method and system for determining downlink channel condition and interference between the subscribers and the base stations as disclosed by Sampath into the system and method of Larsson which measures the uplink and downlink gain, SNIR for using to select the channels into Alamouti '421. The motivation would have been to provide a reliable and relatively fast method for assigning the channels to the subscriber units and improve a method and system for channel reuse.

Art Unit: 2665

5. Claim 6 is rejected under 35 U.S.C. 103(a) as being unpatentable over Alamouti and Sampath as applied to claim 1 above, and further in view of Alamouti (USP 6600776).

Regarding claim 6, Alamouti and Sampath fail to disclose the subscriber uses the allocated channel for conveying the packets using MAC. In the same field of endeavor, Alamouti discloses a method and system for assigning channels for conveying the data packets between the base and mobile based the feedback information on the channels and using MAC (col. 22, lines 65 to col. 23, lines 15 and col. 45, lines 15-17, col. 54, lines 1-8).

Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention was made to apply MAC and packetizing for conveying information between the base and subscriber as disclosed by Alamouti '776 into a method and system of Sampath which uses a channel selection scheme based on the measured channel and noise plus interference at the subscriber and channel information from the base stations into the system and method of Alamouti '421. The motivation would have been to provide a reliable and relatively fast method for assigning the channels to the subscriber units.

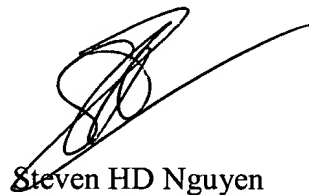
Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Steven HD Nguyen whose telephone number is (571) 272-3159. The examiner can normally be reached on 8-5.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Huy D. Vu can be reached on (571) 272-3155. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Art Unit: 2665

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

A handwritten signature in black ink, appearing to read 'Steven HD Nguyen', with a long horizontal stroke extending to the right.

Steven HD Nguyen
Primary Examiner
Art Unit 2665
10/10/05